



U.S. Department of Energy's Combined Heat and Power Program

Merrill Smith

U.S. Department of Energy

Program Description

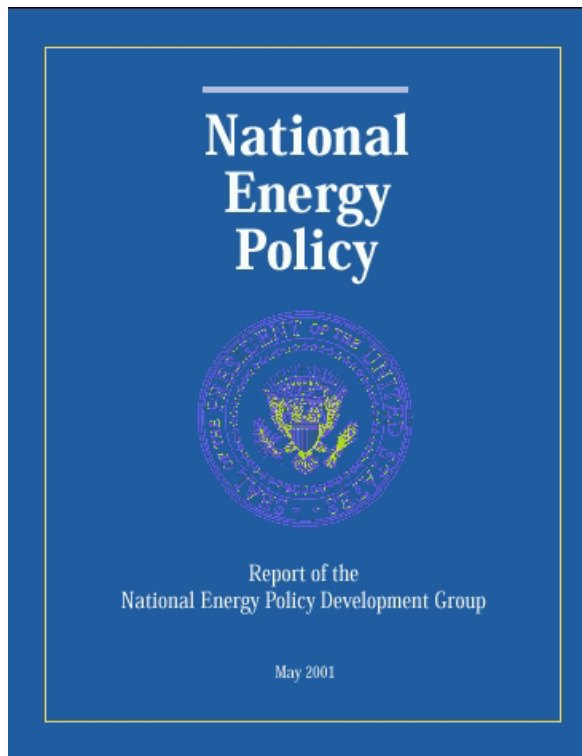
The CHP Program began with the creation of the CHP Vision which was developed jointly between DOE and industry. The program activities are guided by the CHP Technology Roadmap.

Combined Heat and Power Systems use the DER technologies in the MOST efficient manner allowing for the most efficient, cleanest generation available.

The President's National Energy Policy



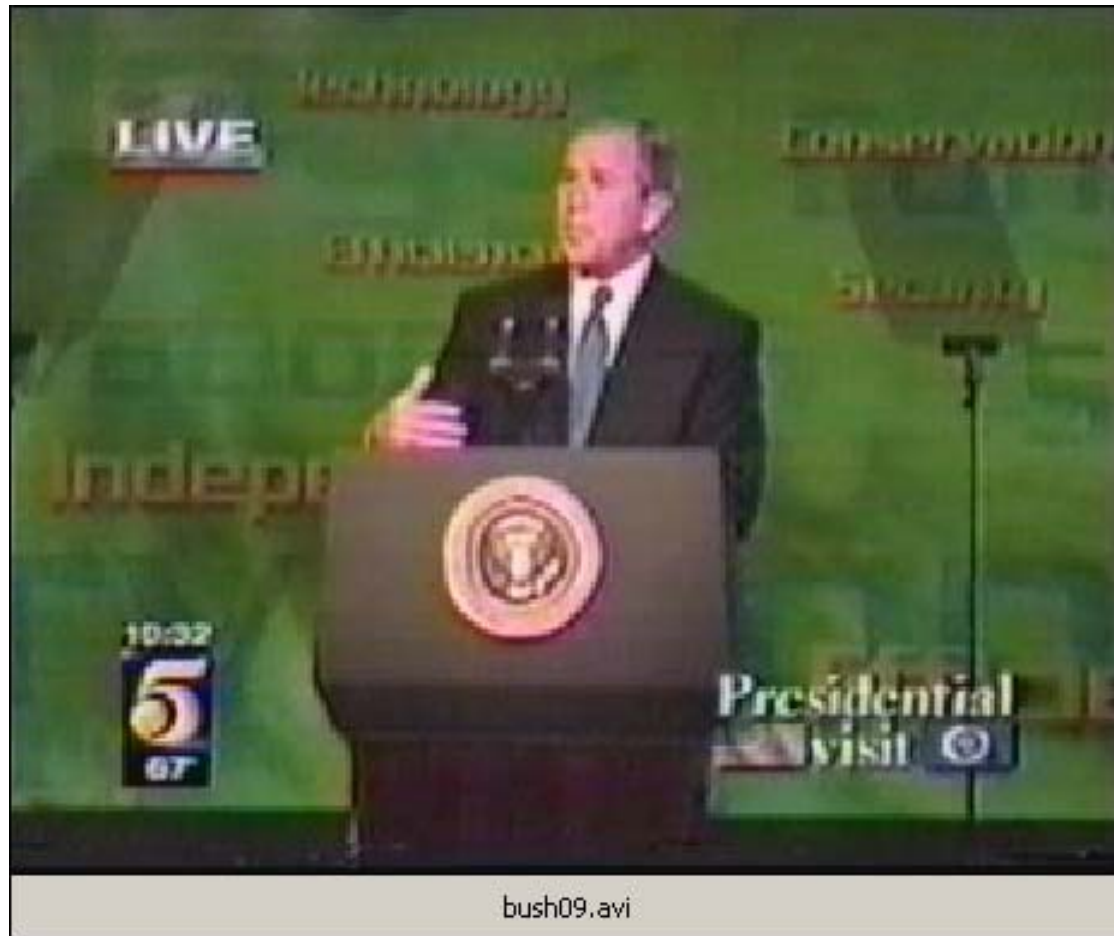
CHP Is a Key Component



"This plant boils enough water to heat 146 major office buildings in downtown St. Paul. Not a bit of energy is wasted, not even the waste."

President George W. Bush, May 17, 2001, St. Paul, Minnesota

The President Knows What CHP Is



The CHP Challenge Goal



1998

46 GW

By 2010, **double**
the amount of CHP
capacity in the
United States

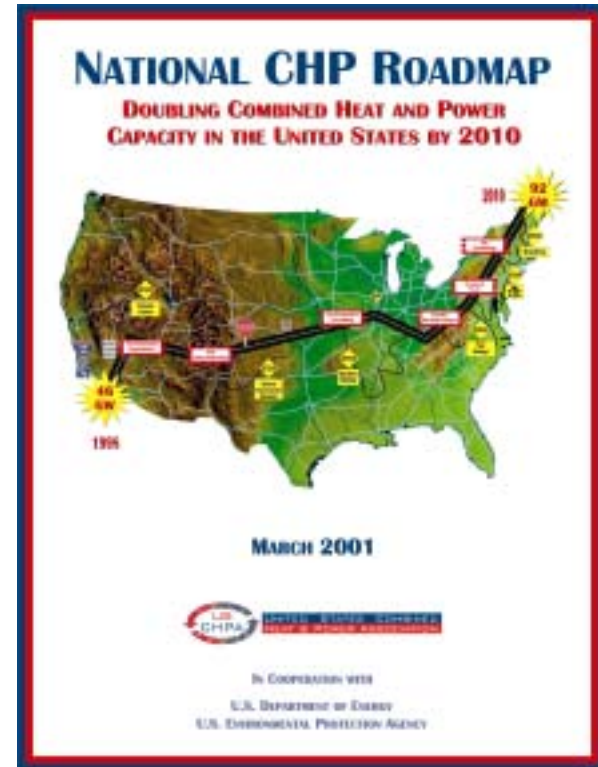
2010

92 GW



Activities

The Activities of the CHP Program are Guided by the Actions Identified in the CHP Technology Roadmap as those items required to meet the CHP Goal



- Raise CHP Awareness
- Eliminate Regulatory and Institutional Barriers
- Develop CHP Markets and Technologies

Raising CHP Awareness

- Solicitation for CHP Assessments (including Brownfields) later this year
- Development of CHP Registry to track progress toward goal
- Funding a study (ORNL and IDEA) assessing existing and potential markets for CHP/District Heating and Cooling at Colleges and Universities (including benefits and barriers)
- Funding a study with FEMP on CHP potential in Federal Facilities (focus on areas with constrained electric supplies)
- Support EnergyStar Award for CHP with EPA
- Participating in the International Energy Agency (District Heating and Cooling)



Eliminating Regulatory and Institutional Barriers



- DER/IEEE's developing uniform interconnect standards
- Development of a model rule for air emissions from smaller scale electric generation resources that will include offsets for CHP
- Texas DG Emissions Limit Analysis
- Environmental Barriers Report
- MOU/Interagency Agreement with EPA on DER/CHP Issues
- Supporting efforts to revise tax codes/depreciation schedules for CHP



Eliminating Regulatory and Institutional Barriers (cont'd)



- SEP projects and State Initiative Solicitation address regulatory and institutional barriers at the state and regional level
 - FL CHP Protocol/Demo
 - HW Identifying CHP Opportunities and Barriers
 - IL CHP Environmental Permitting Guidebook
 - IA Guidelines for permitting and barrier removal
 - VA Overcoming CHP barriers



Developing CHP Markets and Technologies



- Research, Development and Demonstration projects in the Buildings Sector and Federal Sector (includes DER support of FEMP projects and integrated energy systems for buildings)
- Support CHP work in the Industrial Sector (assessments, software, OIT–Best Practices and WA State Clearinghouse)
- Model Application Center at U of IL (SWAT Team) – critical linkage between technical developments and market applications (model for broader national program)
- Investigate potential for CHP at Brownfields and partner with HUD’s community energy program where appropriate.

Markets and Technologies

Sample Projects

- Buildings – Integrated Energy Systems
- Industrial Distributed Generation
- FEMP
 - CHP/Microturbine demo at Ft. Drum, NY
 - CHP/Microturbine installation at Coronado NAB Naval Amphibious Base
 - Sandia Microturbine Operator's Handbook
 - Technical Assistance – CHP feasibility (several sites)

Reality Check

- In October of 2001 the CHP community held a meeting to check the status of where we are and what we need to do in the coming year to ensure we can meet the CHP goal
- It will be a challenge
- We have momentum
- We do not want to adjust our goal
- States will play critical role



Partnerships are Key to Success



- Internal DER/DOE
 - Industrial Distributed Generation Program
 - Integrated Energy Systems
 - Technology Programs (turbines, microturbines, recip, fuel cells)
 - Federal Energy Management Program
 - Office of Industrial Technologies (Best Practices)
 - Office of Building Technologies (CHP education activity)
 - EE Regional Offices (regional strategies for CHP)
- External Coordination
 - EPA (CHP Partnership and permitting issues)
 - USCHPA, IDEA, NEMW, ACEEE
 - State (NYSERDA) and Regional CHP Initiatives (Mid-West)
 - CHP Applications Center

Summary

- The CHP Program follows the vision and roadmap
- CHP is a critical component of the NEP
- CHP is integrated with most DER efforts
- CHP increases efficiencies and reduces emissions of DER tech
- States/regions play critical role in eliminating the barriers to and developing the markets for CHP